

Remarks

The examiner has rejected claims 1-6 under 35 U.S.C. 102(b) as being anticipated by Beyer et al, US Patent 4,019,928, hereinafter Beyer et al, and on the same grounds as being anticipated by Gaucher et al, US Patent 3,912,547, hereinafter Gaucher et al. Although these rejections were separate rejections, they will be treated together since the same arguments as to allowability apply to both references.

Claim 1 has been amended to state certain inherent properties of the composition, and the amendments are not made to change the scope of the claims. As such, the properties given are those properties needed for successful use to provide a hard case on stainless steel; i.e. that the composition will melt and be homogeneous in the temperature range of 750°F to 950°F for forming the hard case. This does not constitute new matter as these properties are disclosed in the specification at page 5, lines 6-12, wherein it is stated:

The bath is used in a fused condition, as indicated above, between about 750°F and about 950° F. It has been found that the higher the cyanate content, the lower the melting temperature of the salt, such that the cyanate content in the range of greater than 45% allows the bath to be molten and eventually homogenous at temperatures between 750°F and 950°F. With the cyanate content at 45% or below, it is difficult to maintain a homogenous molten salt, especially in the lower part of the range of 750°F to 950°F.

The examiner has stated that both Byers et al and Gaucher et al teach the claimed composition for treating steel parts, including the range that encompasses the range of cyanates claimed by applicants. It is true that the range of cyanates claimed by applicants, i.e. broadly 45% to 55.2%, is within the broad ranges disclosed by Beyer et al (25% to 57%) and Gaucher et al (20% to 65%), as pointed out by the examiner. However, within the range claimed by applicants, which is a much narrower range than either range disclosed by Beyer et al or Gaucher et al, special characteristics of the composition are disclosed and claimed in the present

application, which special characteristics are not taught nor suggested by either Beyer et al or Gaucher et al.

As the Board held in Ex parte Kuhn, 132 USPQ 359 (POBA 1961), the fact that a product is within the broad field of the prior art, and one might arrive at it by selecting specific items and conditions, does not render the product obvious in the absence of some directions or reasons for making such selection. Expressed another way, if the proportions are critical to the properties of the novel product, they can render the product patentable even though the percentages of ingredients fall within broader ranges of the prior art. In re Becket et al, 33USPQ 33 (CCPA 1937); In re Arnese, 37 USPQ 217 (CCPA 1938). The criticality of the ranges claimed is clearly stated in the specification as noted above. Hence, claim 1 is clearly allowable.

Claims 2-6 are dependent upon claim 1, either directly or indirectly, and for the same reasons are believed to be allowable.

The examiner has rejected claims 7-12 as being unpatentable under 35 U.S.C. 103(a) over Beyer et al or Gaucher et al in view of Blas et al, US Patent 4,184,899, hereinafter Blas et al, and Caubet, US Patent 3,321,338, hereinafter Caubet. This rejection is not thought to be well taken. The examiner states that Beyer teaches that the "... temperature is from 500-650°C (842-1202°C) (col 2, lines 59-63),..." While the 500°C and 650°C are correct as contained at col 2, lines 59-63 of Beyer et al, the reference by the examiner to (842-1202°C) is not understood. Perhaps the examiner was referring to the conversion of the "C" temperatures to "F" temperatures. If this assumption is correct, then 1202°F is the correct conversion of 650°C to "F", but 500°C converts to 932°F, not 842°F. The examiner states that this overlaps the temperature range in claim 7. Again, it is pointed out that range claimed by applicants produces results not contemplated Beyer et al. As the test results indicated, at a temperature of 750°F, the corrosion resistance of the

surface of austenitic stainless steel is not impaired from the untreated surface but, as temperatures increased, there was more degradation until above 950°F, the corrosion resistance dropped to below 100 hours. (see application page 8, line 11, to page 10, line 3). Such results of nitriding these austenitic stainless steels at these lower temperatures are not suggested by Beyer et al. The reason is postulated at page 10, lines 4-20.

With respect to the 400 series stainless steel, while not as dramatic, there is still improved corrosion resistance at lower nitriding temperatures, as described at page 12 line 6, through page 14, line 2. As indicated above, if the ranges are critical to producing a result, then a broader range in the prior art which does not suggest the benefits of the narrower range is not anticipatory. Clearly, Beyer et al do not teach or suggest the benefits to stainless steel at these temperatures.

The same reasons apply to Gaucher et al which do not suggest the improved corrosion resistance of stainless steel nitrided in the narrower range suggested in claim 7. The addition of Blas et al and Caubet do not overcome the deficiencies of Beyer et al and Gaucher et al. In fact, the examiner does not apply Blas et al and Caubet to claims 7-12 but only to claims 13-14 and 17. Indeed, both of these references, while talking about nitriding stainless steel in all their examples, use temperatures of 942°F or above. While Caubet does mention temperatures as low as 752°F, no examples are given at this temperature, nor is there any indication of the unexpected benefits obtained at this lower temperature.

Claims 8-12 are dependent directly or indirectly on claim 7 and, for the same reasons, are believed to be allowable.

Claims 13-14 and 17 have been rejected under 35 U.S.C. 103 (a) as being unpatentable over Beyer et al or Gaucher et al in view of Blas et al and Caubet. Claim 13 has been cancelled

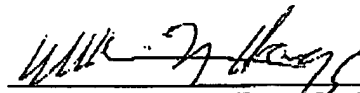
as the subject matter thereof has been incorporated in claim 7, and claims 14 and 17 are dependent upon claim 7 and, for the same reasons, are believed to be allowable.

The examiner indicated that the subject matter of claims 15 and 16 would be allowed if rewritten in independent form, which allowability is gratefully acknowledged. Claim 15 has been rewritten as claim 18 including the limitations of claims 13 and 14, and the dependency of claim 16 has been changed to 18. Thus, claim 18 (rewritten claim 15) and claim 16 are allowable.

In view of the above it is respectfully requested that claims 1-12, 14 and 17 be allowed, along with allowable claims 16 and 18.

Respectfully submitted,

Date: 9/17/03


William N. Hogg (Reg. No. 20,156)
Driggs, Lucas, Brubaker & Hogg Co., L.P.A.
8522 East Avenue
Mentor, Ohio 44060
(440) 205-3600
Fax: (440) 205-3601
e-mail: bill@driggslaw.com

WNH:cg

RECEIVED
CENTRAL FAX CENTER
SEP 17 2003

OFFICIAL